



North Carolina Department of Transportation  
Transportation Program Management Unit - Value Management  
Innovative Technologies and Products Awareness Report  
December 6, 2018



## PRODUCT HIGHLIGHT – DR-46 Motorcycle Barrier Attenuator

Guardrail is an effective method for reducing the severity of run-off-the-road crashes, but traditional guardrail can be less effective for motorcycle crashes when compared to cars. In motorcycle crashes, drivers can slide under guardrail beams and into the posts causing injury. Lindsay Transportation Solutions' DR-46 Motorcycle Barrier Attenuator (MBA) is a polyurethane barrier system designed to prevent these post collisions. It can be added to existing guardrail with bolts and clamps on roadway curves that have proved to be prone to motorcycle crashes through data collection. It is also manufactured in yellow to provide a visual warning for motorcyclists. The DR-46 barrier does not impact the existing guardrail and does not significantly increase the maintenance costs.



*DR-46 Motorcycle Barrier Attenuator installed on a roadway curve.*



*DR-46 MBA installed beneath guardrail*

The DR-46 Motorcycle Barrier Attenuator has been installed at two locations in the country at the time of this report. The first installation was in California, and the second is being installed in Graham County, N.C. along NC-143. There will be 4,500 feet of barrier installed at a cost of \$135,000 once completed. DR-46 is being installed in several curves along NC 143 where a five-year crash study identified 17 crashes involving motorcyclists hitting guardrail and/or guardrail posts - including two fatalities. CALTRANS found that since the barrier was installed in 2011, there has not been a single motorcycle crash. The Department will monitor the crash rate at this location in the near future and possibly install it in other areas if it's effective. This product, like all other safety improvement products, will be evaluated by the Traffic Safety Unit once adequate post-construction data is available.

For more information, please visit: <http://www.barriersystemsinc.com/>

## PRODUCT INNOVATION – SAS Visual Analytics Application

When designing a new project, the Department must minimize the impacts as much as possible to the surrounding environment. This includes, but is not limited to, avoiding disruptions to streams, wetlands, endangered species, and historic landmarks. The Environmental Analysis Unit (EAU) is responsible for providing potential environmental impacts for each project in order for the Project Development Unit to obtain the permits and mitigation needed from the various agencies for the project to move forward. If the process of obtaining the permits is delayed or unexpected environmental issues arise, it can cause delays through the design process and ultimately project delivery. The EAU has calculated these impacts by manually searching GIS data on a per-project basis.

Two years ago, the EAU began using SAS Visual Analytics software to analyze the multiple layers of GIS mapping for identifying potential environmental concerns. This software uses the State Transportation Improvement Program list and GIS environmental data to automatically create statewide reports. These interactive reports contain detailed information of environmental impacts for each project and is displayed as a treemap, which is map that organizes the impacts into blocks as seen in the image on the right. Each block represents a TIP project and is a different color and size to distinguish project cost and type – the higher the cost, the bigger the box. The report helps the EAU and project managers plan for upcoming projects by allowing them to obtain permits or mitigate environmental impacts earlier in the design process. This assists with obtaining the permits in a timely manner and reduces the probability of project delays. For more information, please visit: [https://www.sas.com/en\\_us/software/visual-analytics.html](https://www.sas.com/en_us/software/visual-analytics.html)

